

### Abstract

5           A filter adaptation unit for producing a set of filter coefficients indicative of a transfer function of a system in a given state is provided including a coefficient set selection unit for selecting between two or more sets of filter coefficients. For each set of filter coefficients a respective set of error characterization data elements is generated characterizing the error in a filter's impulse response when using the corresponding set of

10 filter coefficients. The selection unit provides functionality for processing the first and second sets of filter coefficients and the second set of error characterization data elements in order to detect whether a change in the state of the system has occurred and to select a preferred set of filter coefficients. The selected set of filter coefficients is released in a format suitable for use by an adaptive filter. A method and apparatus selecting a set of

15 filter coefficients from a plurality of sets of filter coefficients is also provided, where each set of filter coefficient is associated to a segment of a first signal. The sets of filter coefficients are compared to one another to select at least one set of filter coefficients from the plurality of sets of filter coefficients at least in part on the basis of energy values associated to impulse response of the plurality of sets of filter coefficients.

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